

R E M A R K S

Claim 1 is amended to specify how the particles are prepared, based upon such disclosure herein as original claim 10 and Example 1. Claims 2 and 3 are recast in independent form. New claims 19 and 20 are based upon Example 2. Claims 10-14 are cancelled without prejudice to their reassertion in this or a continuing application. No new matter has been introduced. Claims 1-9 and 15-20 are in the application.

Claims 1-9 and 15-18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kruithof or van der Hoek or Le Cloirec. The Examiner argues that forming an admixture of calcium carbonate and sulfur by mixing calcium carbonate particles with sulfur to disperse the particles in sulfur would have been an obvious way of forming the admixture, and that mixing “other materials” with the admixture as in claims 3-5, 8, and 9 would have been obvious in order to obtain the binding and/or filtration properties of these materials.

The prior art of record neither teaches nor suggests a denitrifying composition for microbially removing nitrate nitrogen from water that is made of particles of calcium carbonate **dispersed in** sulfur by heating and dispersing calcium carbonate in melted sulfur and solidifying the dispersion by cooling, as

required by claim 1 in its present form. Moreover, the specification provides evidence that such composition (“invention 4”) has properties that are unexpectedly better than those of a comparative composition prepared by admixture (“comparison 1”). See Examples 1 and 2 on pages 18-19 of the specification. Table 1 on page 20 of the specification demonstrates the far superior decrease in concentration of nitrate nitrogen with the composition representative of this invention (e.g., 20 mg/l after 30 days) as compared to with the composition representative of the prior art (82 mg/l after 30 days).

The prior art of record neither teaches nor suggests a denitrifying composition for microbially removing nitrate nitrogen from water that is made of particles of calcium carbonate and particles of a substance possessing cation exchange capacity dispersed in sulfur, as required by claim 2. Moreover, the specification provides evidence that such composition (“invention 3”) has properties that are unexpectedly better than those of a comparative composition prepared by admixture (“comparison 1”). See Example 2 on pages 18-19 of the specification. Table 1 on page 20 of the specification demonstrates the far superior decrease in concentration of nitrate nitrogen with the composition representative of this invention (e.g., 8 mg/l after 30 days) as compared to with the composition representative of the prior art (82 mg/l after 30 days).

The prior art of record neither teaches nor suggests a denitrifying composition for microbially removing nitrate nitrogen from water that is made of particles of calcium carbonate and particles of a microporous substance dispersed in sulfur, as required by claim 3. Moreover, the specification provides evidence that such composition ("invention 1") has properties that are unexpectedly better than those of a comparative composition prepared by admixture ("comparison 1"). See Example 2 on pages 18-19 of the specification. Table 1 on page 20 of the specification demonstrates the far superior decrease in concentration of nitrate nitrogen with the composition representative of this invention (e.g., 8 mg/l after 30 days) as compared to with the composition representative of the prior art (82 mg/l after 30 days).

Clearly, the claims in their present form define inventions that are patentable over Kruithof or van der Hoek or Le Cloirec or any combination thereof. Withdrawal of the rejection of record is respectfully solicited.

If the Examiner has any questions concerning this application, he is requested to contact Richard Gallagher, Reg. No. 28,781, at (703) 205-8008.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit

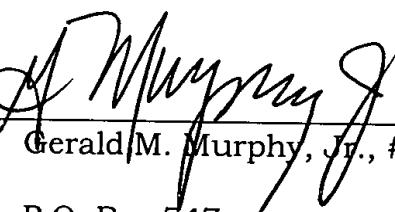
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Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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